REMARKS

Claims 1, 3-5, 8-10, 12-21 and 23-30 are pending in this application. By this Amendment, claims 1, 3-4, 8, 12, 14, 16, 21 and 23-26 are amended and claims 2, 6 and 22 are canceled without prejudice or disclaimer. Various amendments are made for clarity and are unrelated to issues of patentability.

The Office Action rejects claims 1-6, 8-10 and 12-30 under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. The Office Action appears to make a statement regarding the equations in paragraphs [0039] and [0042], which are actually provided in paragraphs [0037] and [0039]. By this Amendment, dependent claim 6 is canceled.

Applicant respectfully submits that features relating to estimating, which appears to be discussed on page 3 of the Office Action are clearly defined in the specification and enable one skilled in the art to make and/or use the invention. The specification supports and enables estimating a region as a candidate region from the power distribution obtained by adding the absolute value from channel I and the absolute value from channel Q, as recited in independent claim 1. Applicant respectfully submits that the features of the estimating and/or the estimator, as recited in the independent claims, is fully described in the specification and is sufficient to enable one skilled in the art to make and/or use the claimed features. Applicant further submits that the claims as amended are proper and fully supported by the specification. One skilled in the art would be able to make and/or use the features relating to the estimating as recited in each of the claims. Withdrawal of the rejection under 35 U.S.C. §112, first paragraph, is respectfully requested.

The Office Action objects to claim 1. It is respectfully submitted that the above amendments obviate the grounds for objection. Withdrawal of the objection is respectfully requested.

The Office Action rejects the claims under 35 U.S.C. §103(a) over various combinations of newly-cited U.S. Patent 5,999,561 to Naden et al. (hereafter Naden), U.S. Patent Publication 2005/0053048 to Van Der Wal et al. (hereafter Van Der Wal), U.S. Patent 4,259,740 to Snell, newly-cited U.S. Patent 7,280,586 to Tanaka, U.S. Patent 5,442,579 to Thomson and U.S. Patent Publication 2002/0080285 to Oshima. The rejections are respectfully traversed with respect to the pending claims.

Independent claim 1 recites selecting a region for an initial synchronization from an input signal, wherein selecting the region comprises: respectively accumulating input signals of a channel I and a channel Q, and obtaining an absolute value for the channel I and an absolute value for the channel Q, adding the absolute value for the channel I and the absolute value for the channel Q to obtain a power distribution, and estimating a region as a candidate region from the power distribution obtained by adding the absolute value for the channel I and the absolute value for the channel Q, the estimated region having a high power distribution in the power distribution of the added absolute values. Independent claim 1 also recites obtaining an initial synchronization by correlating the selected region and a synchronous code, wherein obtaining the initial synchronization includes: obtaining a correlation value of each of a plurality of candidate regions, and judging that synchronization has been obtained in a corresponding one of the candidate regions if a specific correlation value is greater than a threshold value.

The applied references do not teach or suggest all the features of independent claim 1, which includes features from previous dependent claim 2. More specifically, the applied references as a whole do not teach or suggest adding an absolute value for a channel I and an absolute value for a channel Q <u>to obtain a power distribution</u> and <u>estimating a region</u> as a candidate region <u>from the power distribution obtained by adding the absolute value for the channel I and the absolute value for the channel Q</u>, the estimated region having a high power distribution in the power distribution of the added absolute values.

The Office Action states that Naden and Van Der Wal do not teach or suggest features relating to accumulating signals of a channel I and a channel Q, obtaining two absolute values for the channel I and the channel Q and adding the two absolute values. The Office Action then relies on Snell's FIG. 3A as showing these missing features. See, for example, Snell's I and Q channel accumulators 22 and 23, absolute value circuits 24 and 25 and adder 26. However, Snell's adder 26 further receives an input from a summation accumulator 27. Further, the summation accumulator 27 outputs signals to upper and lower threshold detectors 32 and 33. See, for example, col. 8, lines 17-31 and 49-55 as well as col. 10, lines 1-31. Thus, Snell does not add absoluate values of I/Q signals <u>to obtain a power distribution</u> as recited in independent claim 1. Snell also includes that an output of the summation accumulator 27 is provided as an input to the adder 26.

The Office Action also appears to rely on Van Der Wal as disclosing an estimator. However, there is no suggestion that Van Der Wal's processor 7 would receive an output from Snell's adder 26 as appears to be indicated in the Office Action. Furthermore, Van Der Wal's

processor 7 does not estimate a region as a candidate region <u>from a power distribution obtained</u>

<u>by adding the absolute value for the channel I and the absolute value for the channel Q</u>. Van

Der Wal does not receive a power distribution obtained from adding the absolute value from

channel I and the absolute value from channel Q as recited in independent claim 1.

Further, there is no suggestion in the prior art to combine Snell and Van Der Wal so as to

obtain the features recited in independent claim 1. The Office Action (on page 9) appears to

state that there is motivation to combine the two references because it is simple and an

inexpensive method. However, this is not proper motivation to combine the two references,

which contain different inputs and outputs and therefore would not be compatible as alleged in

the Office Action. Applicant respectfully submits that this combination of Snell with Nader/Van

Der Wal is based on impermissible hindsight.

For at least the reasons set forth above, Naden, Van Der Wal and Snell do not teach or

suggest all the features of independent claim 1. The other applied references do not teach or

suggest the missing features. Thus, independent claim 1 defines patentable subject matter.

Independent claim 8 recites respectively accumulating I and Q signals and obtaining two

absolute values for the I and Q signals, and adding the absolute value for the I signal and the

absolute value for the Q signal to obtain a power distribution of the added absolute values.

Independent claim 8 also recites estimating a candidate region from the power distribution of the

added absolute values, and correlating a synchronous code with the estimated candidate region

from the power distribution of the added absolute values to obtain initial synchronization of a

terminal, wherein the initial synchronization includes: obtaining a correlation value by correlating

the candidate region and a synchronous code, and judging that synchronization has been obtained at the corresponding candidate region if the specific correlation value is greater than a threshold value.

For at least similar reasons as set forth above, the applied references do not teach or suggest all the features of independent claim 8. More specifically, the applied references do not teach or suggest adding the absolute value for the I signal and the absolute value for the Q signal to obtain a power distribution of the added absolute values, estimating a candidate region from the power distribution of the added absolute values, and correlating a synchronous code with the estimated candidate region from the power distribution of the added absolute values to obtain initial synchronization of a terminal.

Snell does not teach or suggest adding an absolute value for an I signal and an absolute value for a Q signal to obtain a power distribution of the added absolute values. The other references do not suggest these features. Further, Van Der Wal does not teach or suggest estimating a candidate region from the power distribution of the added absolute values. Likewise, the other references do not suggest these features. The applied references, as a whole, do not suggest all the claimed features. Additionally, there is no suggestion to combine these references as alleged. Rather, the combination is based on impermissible hindsight. The applied references also have no suggestion for correlating a synchronous code with the estimated candidate region from the power distribution of the added absolute values.

For at least these reasons, the applied references do not teach or suggest all the features of independent claim 8. Thus, independent claim 8 defines patentable subject matter.

Independent claim 12 is rejected based on Tanaka. Tanaka is a patent that issued from a

U.S. National Stage application of a PCT application filed July 18, 2002. The corresponding PCT

publication WO 03/013017 was <u>not published in English</u>. Therefore, Tanaka is not entitled to a

date under 35 U.S.C. 102(e). Applicant has previously filed a verified English-language

translation of Korean Application 67669/2002, filed November 2, 2002, which is the Korean

priority document. It is respectfully submitted that the Korean priority document supports each

of rejected claims 12-20. Accordingly, Tanaka is not prior art to the present application under

any section of 35 U.S.C. §102. The rejection based on Tanaka should be withdrawn for at least

this reason. Van Der Wall, Snell, Thomson do not teach or suggest the features of independent

claim 12 and its dependent claims 12-20. Thus, independent claim 12 (and its dependent claims)

defines patentable subject matter.

Independent claim 21 recites accumulation buffers and absolute value calculators to

receive the I signals and the Q signals, to generate an absolute value for the I signal, and to

generate an absolute value for the Q signal. Independent claim 21 also recites an adder to add

the absolute value of the I signal and the absolute value of the Q signal, and to generate the

added values of the I and Q signals as a power distribution, and an estimator to receive the

power distribution of the added values of the I and Q signals from the adder, and to select a

region from the power distribution of the added value of the I and Q signals. Independent claim

21 also recites a synchronizer to determine an initial synchronization from the region by

correlating the selected region to a synchronization code, wherein the initial synchronization is

determined by: obtaining a correlation value by correlating the candidate region and a

synchronous code, and judging that synchronization has been obtained at the corresponding candidate region if the specific correlation value is greater than a threshold value.

For at least the reasons set forth above, the applied references do not teach or suggest all the features of independent claim 21, which includes features from previous dependent claim 22. More specifically, the applied references (including Snell and Van Der Wal) do not teach or suggest an adder to add the absolute value of the I signal and the absolute value of the Q signal, and to generate the added values of the I and Q signals as a power distribution, and an estimator to receive the power distribution of the added values of the I and Q signals from the adder, and to select a region from the power distribution of the added value of the I and Q signals. Thus, independent claim 21 defines patentable subject matter.

For at least the reasons set forth above, each of independent claims 1, 8, 12 and 21 defines patentable subject matter. Each of the dependent claims depends from one of the independent claims and therefore defines patentable subject matter at least for this reason. In addition, the dependent claims recite features that further and independently distinguish over the applied references.

CONCLUSION

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and prompt allowance of claims 1, 3-5, 8-10, 12-21 and 23-30 are earnestly solicited. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is

hereby made. Please charge any shortage in fees due in connection with the filing of this,

concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and

please credit any excess fees to such deposit account.

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